DOCUMENT RESUME

ED 480 546 EF 006 350

AUTHOR	Brady, Jim
TITLE	Keys to Success: School Facilities Primer, Questions & Answers 101.
PUB DATE	2003-00-00
NOTE	31p.; Produced by PageSouthlandPage.
AVAILABLE FROM	PageSouthlandPage, Colonial Place, 2107 Wilson Boulevard, Suite 410, Arlington, VA 22201-3008. Tel: 703-527-4100; Fax: 703-522-8043; Web site: http://www.psp.com.
PUB TYPE	Guides - Non-Classroom (055)
EDRS PRICE	EDRS Price MF01/PC02 Plus Postage.
DESCRIPTORS	*Accessibility (for Disabled); Asbestos; Boards of Education; Bond Issues; Construction Costs; *Educational Environment; Educational Facilities Design; *Educational Facilities Planning; Elementary Secondary Education; Information Technology; Life Cycle Costing; Maintenance; Quality Control; *School Construction; School Safety; Sustainable Development
IDENTIFIERS	Building Codes; Sustainability

ABSTRACT

This publication provides answers to basic questions to help school board members more fully address the complexities of the planning, design, and construction process in order to maximize the goal of student success. The 101 questions and answers are in the areas of: facility planning; learning environment; information technology; safe schools; life cycle costing; facility standards; facility costs; maintenance; bond issues; site issues; accessibility; building codes; asbestos; working with architects; construction delivery options; and sustainabilty issues. (SM)

Reproductions supplied by EDRS are the best that can be made
from the original document.

ED 480 546

Keys to Success

School Facilities Primer

Questions & Answers 101

by Jim Brady, AIA, REFP

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

X This document has been reproduced as received from the person or organization originating it.

☐ Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

PERMISSION TO REPRODUCE AND DISSEMINATE THIS MATERIAL HAS BEEN GRANTED BY

Nancy A. Fleshman

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

Full text available at:
http://www.psp.com/news/
Keys2SuccessSchool.pdf

PageSoutherlandPage
The Next 100

EF 006 350

BEST COPY AVAILABLE

Foreword

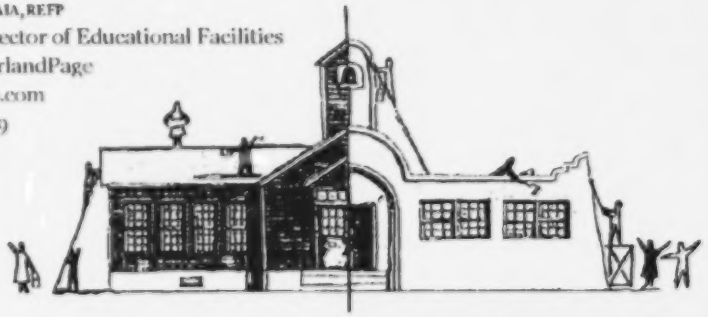
School learning environments that are **safe, nurturing, flexible and engaging** enhance student success. **Maximizing facility value** for taxpayers is an equally important consideration. As a school district endeavors to meet these goals, it must address many issues and questions related to its school facilities.

This publication has been developed for the Texas Association of School Boards' Summer Leadership Institute in the hope that by providing some basic questions, answers and vocabularies, we can help school board members more fully address the complexities of the planning, design and construction process to maximize our common goal: **student success.**

If you have additional questions or suggestions, we welcome your feedback.

Jim Brady

Jim Brady, AIA, REFP
Partner, Director of Educational Facilities
PageSoutherlandPage
jbrady@psp.com
888.541.7119



June 2003
Keys to Success Series
PageSoutherlandPage

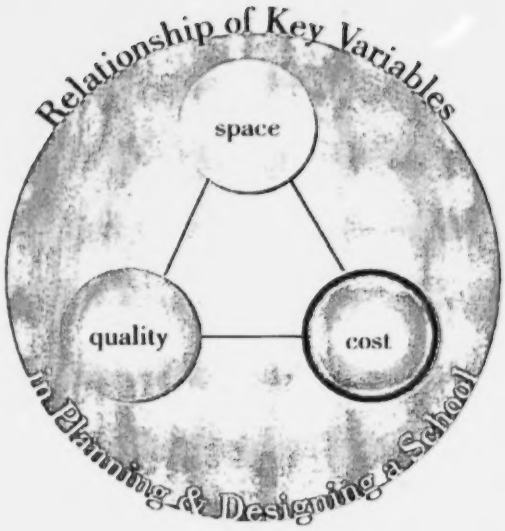
Table of Contents

Facility Planning	Page 1
Learning Environment	Page 3
Information Technology	Page 8
Safe Schools	Page 8
Life Cycle Costing	Page 8
Facility Standards	Page 9
Facility Costs	Page 13
Maintenance	Page 15
Bond Issues	Page 16
Site Issues	Page 16
Accessibility	Page 17
Building Codes	Page 18
Asbestos	Page 18
Working with Architects	Page 19
Construction Delivery Options	Page 19
Sustainability Issues	Page 24

Facility Planning

1. *In planning and designing a school, what are the key variables or determinants of any school?*
   - Quality
   - Size/program requirements (Space)
   - Cost/Time (Budget / Schedule)
   - Any two dictate the third

   Source: CEFPI's Educational Facility Planner



2. *What are the key components of the facilities planning process?*
   - Establish Vision
   - Develop Guidelines
   - Determine Needs
     - Supply
       - real estate holdings
       - student capacity
     - Demand
       - demographics
       - program requirements
   - Develop Options
   - Assess Options
   - Develop Plan
     - projects
     - timeline
     - funding

3. *What are some online resources for addressing facility issues?*

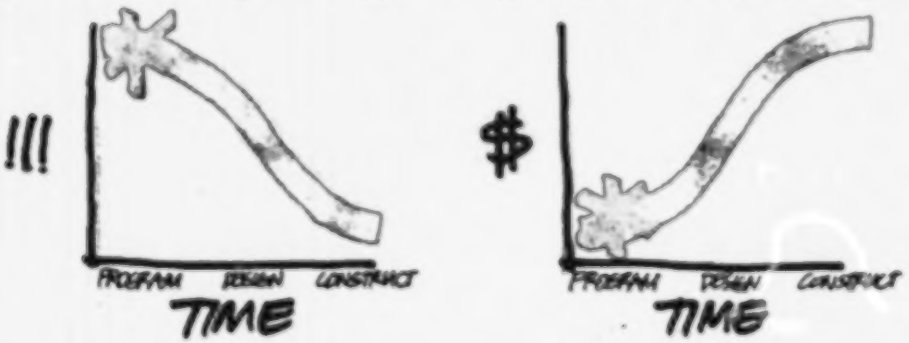
Council of Educational Facilities Planning International | www.cefpi.org
Design Share | www.designshare.com
National Clearinghouse for Educational Facilities | www.edfacilities.org
School Construction News | www.schoolconstructionnews.com
The George Lucas Educational Foundation | www.glef.org

BEST COPY AVAILABLE

4. *What are common pitfalls to successful planning?*

- Lack of focus or clear objectives
- Lack of agreement on next steps
- Lack of or inadequate planning for implementation
- True decision-makers not identified or involved
- "Scope creep" - project scope grows over time
- Lack of communication
- The project didn't solve the right problem
- The schedule or budget set unrealistically low
- Lack of coordination, control or follow up
- Lack of influential leadership
- Goals too vague

5. *When is the greatest opportunity for influence in a project that is cost effective?*



6. *What is an educational specification?*

A written document for a proposed new school facility or major space renovation that includes a description of the proposed project, expressing the range of issues and alternatives.
Source: 19 Texas Administrative Code (TAC) §61.1033

7. *Who is to develop educational specifications?*

School districts with personnel on staff with experience in developing specifications, or, if school districts have no qualified personnel, they "shall utilize the services of a design professional or consultant experienced in

school planning and design to assist in the development of the educational specifications."
Source: 19 Texas Administrative Code (TAC) §61.1033

8. *What should be included in an educational specification?*
   - Instructional programs
   - Grade configuration
   - Type of facility
   - Spatial relationships
   - Number of students
   - Specialized classrooms and support areas
   - Estimated budget
   - School administrative organization
   - Hours of operation
   - Safety of students
   - Overall security of facility

   Source: 19 Texas Administrative Code (TAC) §61.1033

9. *School districts should consider developing a long-range facility plan prior to committing capital expenditures. What should a long-range school facility plan address?*
   - A description of the current and future instructional program and delivery issues
   - The age, condition and educational appropriateness of all buildings on campus
   - Verification of the suitability of school site(s) for intended use
   - A timeline and recommendations to modify or supplement existing facilities

   Source: 19 Texas Administrative Code (TAC) §61.1033

Learning Environment

10. *What are some of the facility concepts which support school reform and contribute to educational achievement?*

- Smaller schools
- Schools as community hubs
- Team suites and clusters
- Smaller classrooms
- Supervisable circulation paths
- Portfolio process studios
- Cluster of teacher offices
- Daylighting

Source: Designing Places for Learning by ASCD and CEFPI

11. *What effect does color have on learning?*

- Color impacts alertness and creativity and can affect IQ test results as much as 12 points. Those stimulating colors are: yellow, yellow-green, orange
- Red raises blood pressure, pulse rate, respiration, skin response. It excites brain waves.
- Blue lowers blood pressure and pulse rate. Skin response slows, brain waves decline.

Source: Munich Institute of Rational Psychology

12. *What are the color perceptions on the effect of room temperature?*

Tests document that people estimate the temperature of a room with cool colors such as blues and greens to be 6-10 degrees Fahrenheit cooler than the actual temperature and for warm colors, such as reds and oranges, 6-10 degrees warmer.

Source: CEFPI-Safe and Secure Learning Environments-Effect of Color and Light 1999

13. *Is there a difference in the effects of artificial light on students and student achievement?*

Full spectrum light has all the characteristics of daylight, including Vitamin D. Study results show students under full spectrum lights attended 3.2 to 3.8 more days per year, had nine times less tooth decay, grew an average of ¾" taller over a two-year period and had improved academic performance.

Source: Alberta Department of Education

14. *Does natural light in classrooms affect student performance?*

The "Re-Analysis Report: Daylighting in Schools, Additional Analysis" study expands and validates previous research by the Heschong Mahone Group that found a statistical correlation between the amount of daylight in elementary school classrooms and the performance of students on standardized math and reading tests. This

research was performed under the California Energy Commission's Public Interest Energy Research Program and was managed by New Buildings Institute. The reanalysis findings revealed, overall, elementary students in classrooms with the most daylight showed a 21 percent improvement in learning rates compared to students in classrooms with the least daylight.

Source: New Buildings Institute

15. *What is the effect of improving learning environments through renovation and remodeling?*

In a Rochester NY study, after renovation of all district elementary facilities, there was an increase in standardized math scores of over 5%.

Source: CEFPI - Northwest Region 1997

16. *What impact does the condition of the facility have on student achievement?*

A study in Washington, DC shows a range of 11% difference in standardized student test scores between poor and good facilities.

Source: School House in the Red

17. *What emerging educational issue has facility implications?*

Spaces designed to foster and support individual learning styles/ multiple intelligences including:

- verbal-linguistic
- logical-mathematical
- visual-spatial
- bodily-kinesthetic
- musical-rhythmical
- interpersonal
- intra-personal
- naturalist
- existential

Source: Transforming the Learning Environment- AIA

18. *What are the six themes of Breaking Ranks: Changing an American Institution and their related facility / teaching implications?*

1. *Personalization*
   School units of no more than 600
   Variety of instructional strategies (learning styles)
2. *Coherency*

Interdisciplinary instruction
Real world application

3. *Time and Organization*
   Teacher/Student Contact: 1:90
   12 month operation
   Abandon Carnegie unit
4. *Technology*
   Access
   Instructional and learning activities
5. *Professional Development*
   Large group learning areas for adults
6. *Leadership*
   Shared leadership in nurturing environment

Source: National A... ociation of Secondary Principals on the High School of the 21st Century

19. *What are some of the facility implications of lecture vs project-based learning?*

- Passive vs. active
- Smaller vs. larger spaces
- Structured vs. flexible
- Fixed seating vs. flexible lab tables
- Carpet vs. hard surface
- Front of room vs. centers of learning
- Teacher-centered vs. student-centered

20. *What is the current trend regarding carpet in schools?*

The amount of space in schools that is carpeted has decreased. During 2002, the percentage of space carpeted in new K-12 schools was 24%.

Source: American School & University May 2003

21. *For each of the different teaching strategies, there should be a correlating facility response. What are the effects of teaching strategies on learning?*

Students Generally Remember...

Read	10% of what they read
Hear words	20% of what they hear
Watch still pictures	30% of what they see
Watch exhibit Watch demonstration	50% of what they hear and see
Do a site visit Do a dramatic presentation	70% of what they say and write
Simulate a real experience Do the "real thing"	90% of what they say and do

Source: Edgar Dale's "Cone of Experience"

BEST COPY AVAILABLE

Information Technology

22. *How does the State of Texas compare with overall US statistics regarding access to technology in schools?*

	TEXAS	US
Students per instructional computer	3.3	3.8
Students per instructional computer in classrooms	8.1	9.2

Source: "Technology Counts 2003," Education Week on the Web

Safe Schools

23. *What is the description of a safe school?*

A safe school refers not only to the physical safety of the students, but the emotional safety of the students as well.

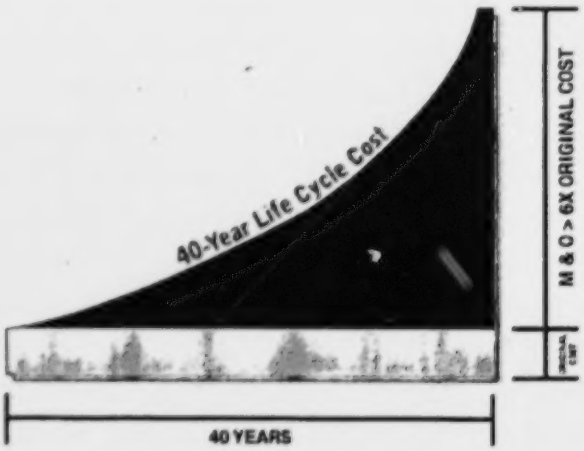
24. *What are the significant safety problem areas in a school environment?*

- School grounds
- Parking lots
- Cafeterias
- Corridors
- Classrooms
- Locker rooms
- Restrooms
- School buses
- Labs and preparation rooms

Life Cycle Costing

25. *What is life cycle costing?*

Building cost, maintenance and operating costs (M&O), inflation and financing over a building's life.
Source: Space, Inc.



26. *What is the life cycle cost of a 40-year facility?*

For a building constructed with quality materials and craftsmanship, the M&O costs over a 40-year life cycle of a typical school building exceeds the original construction cost by more than six times.
Source: Space, Inc.

27. *What has been the history of the life cycle of schools?*

Schools built in the early years of the 1900s were frequently built for a life span of 50 to 100 years. Buildings built after 1970 were designed to have a life span of only 20 to 30 years.
Source: U. S. Government Accounting Office

28. *How many buildings are currently reaching their predicted life cycle in the U.S.?*

More than 60% of America's schools are reaching the end of their predicted life span.
Source: U. S. Government Accounting Office

Facility Standards

29. *What is the range of square footage per student for an elementary school?*

400-600 students	130-140/SF per student
600-800 students	110-130/SF per student
800-1000 students	100-110/SF per student

Source: CEFPI Southern Region Annual Conference, 1997

30. *What is the range of square footage per student for a middle school /intermediate school?*

600-800 students	160-175/SF per student
800-1000 students	155-160/SF per student
1000-1200 students	150-155/SF per student
1200-1500 students	125-150/SF per student

Source: CEFPI Southern Region Annual Conference, 1997

31. *What is the range of square footage per student for a high school?*

1500-2000 students	150-180/SF per student
2000-3000students	140-170/SF per student

Source: CEFPI Southern Region Annual Conference, 1997

Questions 32-40: The Commissioner of Education has adopted amendments to 19 TAC Chapter 61, School Districts, Subchapter CC, Commissioner's Rules Concerning School Facilities, effective June 9, 2003.

32. *What does a district do to show compliance with Texas state facility standards?*

To ensure that facilities have been designed and constructed according to state standards, the school district, architect and contractor must each execute the Certification of Project Compliance developed by the Texas Education Agency. The school district retains this form indefinitely until review and/or submittal is required by representatives of TEA.

For a copy of the document:www.tea.state.tx.us/school.finance/facilities/rnd7rfa.doc

33. *When is the implementation date for the **new** school facility standards outlined in the June 6, 2003, Texas Register?*

The new standards (19 TAC §61.1036) will apply to projects for new construction or major space renovations for which construction documents have been approved on or after January 1, 2004. For projects funded from bond elections prior to October 1, 2003, and for which a contract for construction has been awarded no later than 31 December 2005, school districts may use the current square footage standards (19 TAC §61.1033) required for science lecture/labs and libraries.

34. *What are the new State of Texas minimum square footage standards for general classrooms?*

PK-1	800 SF/room or 36 SF/ student for districts with small class sizes
Elementary	700 SF/room or 32 SF/student for districts with small class sizes
Secondary	700 SF/ room or 28 SF/student for districts with small class sizes

35. *What are the new State of Texas minimum square footage standards for computer classrooms that are used for the teaching of computer skills ?*

900 SF/room for 25 students; 36 SF/student will be added for each student in excess of 25.
36 SF/student for districts with small class sizes

36. *What are the new State of Texas minimum square footage standards for computer labs that are used to support other instructional areas?*

25 SF/computer station; 20 SF/computer station when portable computers will be used

37. *What are the new State of Texas minimum square footage standards for combination science lab/classrooms, where each student has a lab station?*

Elementary	900 SF/room for 22 students plus 41 SF/each student in excess of 22 students
Middle School	1,200 SF/room for 24 students plus 50 SF/each student in excess of 24 students
High School	1,400 SF/room for 24 students plus 58 SF/each student in excess of 24 student

Exception: For school districts with small class sizes,

Elementary	41 SF/student, but not less than 700 SF
Middle School	50 SF/student, but not less than 950 SF
High School	58 SF/student, but not less than 1,100 SF

38. *What are the new State of Texas minimum square footage standards when separate science classrooms and science labs are used?*

A *science classroom* shall be a minimum of 700 SF, regardless of grade level. School districts with small class sizes may provide a minimum of 32 SF/student.

Science Laboratory

Elementary	800 SF/room for 22 students plus 36 SF/each student in excess of 22 students
Middle School	900 SF/room for 24 students plus 38 SF/each student in excess of 24 students
High School	1,000 SF/room for 24 students plus 42 SF/each student in excess of 24 student

Exception: For school districts with small class sizes,

Elementary	36 SF/student, but not less than 600 SF
Middle School	38 SF/student, but not less than 700 SF
High School	42 SF/student, but not less than 800 SF

39. *What are the new State of Texas minimum square footage standards for gymnasiums?*

Primary gymnasiums or PE space if required by district's educational program

Elementary	3,000 SF
Middle School	4,800 SF
High School	7,500 SF

40. *What are the new State of Texas minimum square footage standards for libraries based on planned student capacity?*

Based on the School Library Standards and Guidelines adopted under TEC §33.021

Up to 100 students	1,400 SF
101-500 students	1,400 SF plus 4 SF/each student in excess of 100 students
501-2,000 students	3,000 SF plus 3 SF/each student in excess of 500 students
2,001 or more students	7,500 SF plus 2 SF/each student in excess of 2,000 students

41. *What are the nationally recommended classroom sizes for traditional delivery of instruction?*

Kindergarten	1200 SF
Elementary	900 SF
Middle School	850 SF
High School	800 SF

Source: CEFPI -Guide for School Facility Appraisal

42. *How do square footages per student for special learning areas at the secondary level compare to standard classrooms? (national statistics)*

Classrooms	25-30 SF per student
Art	45-50 SF per student
Band	40-50 SF per student
Choir	30-35 SF per student
Special Ed	35-45 SF per student
Industrial Arts	100-110 SF per student

43. *What is the median elementary school size and square footage per/student in the US?*

650 students @ 146 SF/ student

Source: American School & University - 29th Annual Education Construction Report, 2003

44. *What is the median middle school size and square footage per/student in the US?*

850 students @ 159 SF / student

Source: American School & University - 29th Annual Education Construction Report, 2003

45. *What is the median high school size and square footage / student in the US?*

765 students @ 134 SF / student

Source: American School & University - 29th Annual Education Construction Report, 2003

Facility Costs

46. *What is the comparable cost of a portable versus a permanent building for the life of the building?*

Portable building life-cycle cost will be 166% more than permanent construction due to the costs of energy efficiency, maintenance and refurbishing.

Source: Texas Association of School Administrators "Temporary Education"

47. *What is Value Engineering?*

Value Engineering is a process to evaluate all parts of a product or process with the objective of arriving at the best value commensurate with lowest cost in context of the design criteria. This is typically done at the conclusion of schematic design. Value engineering should address life cycle cost and design criteria as well as the initial capital costs.

48. *What have been the annual increases in school construction costs?*

Example: Greater Houston Area for the last ten school years:

1994	5.5%	1999	9%
1995	6.2%	2000	7.5%
1996	7.4%	2001	5.5%
1997	7.5%	2002	4.5%
1998	9%	2003	4.5% (projected)

49. *What are the effects of escalation (compounded) on a project budget?*

Example using Greater Houston Area inflation rate:

A school constructed for $5 million in 1993 would cost $9.51 million in 2003

50. *What is the average elementary school square footage cost in the Southern Region (Texas, Oklahoma, Louisiana and Arkansas)?*

Low	Medium	High
$85.00	$92.00	$100.00

Source: CEFPI Southern Region Annual Conference, 2002

51. *What is the average middle school/junior high school square footage cost in the Southern Region?*

Low	Medium	High
$89.00	$97.00	$106.00

Source: CEFPI Southern Region Annual Conference, 2002

52. *What is the average high school square footage cost in the Southern Region?*

Low	Medium	High
$95.00	$105.00	$115.00

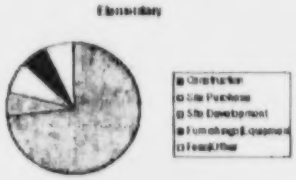
Source: CEFPI Southern Region Annual Conference, 1997

53. *What should be considered in a total project cost/budget?*

- Construction cost
- Technology infrastructure
- FFE (furniture, fixtures/equipment)
- Site purchase/site development
- Off-site improvements
- Testing/balancing
- Program management
- A/E design fees
- Planning and programming fees
- Legal fees

54. *What is the average project cost allocation for elementary schools?*

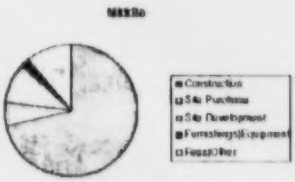
Construction	73%
Site Purchase	6%
Site Development	8%
Furnishings/Equipment	6%
Fees/Other	7%
	100%



Source: American School & University May 2003

55. *What is the average project cost allocation for middle schools?*

Construction	71%
Site Purchase	6%
Site Development	10%
Furnishings/Equipment	2%
Fees/Other	11%
	100%

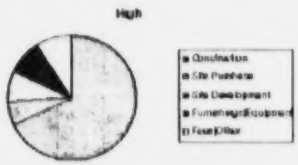


Source: American School & University May 2003

BEST COPY AVAILABLE

56. *What is the average project cost allocation for high schools?*

Construction	68%
Site Purchase	6%
Site Development	8%
Furnishings/Equipment	9%
Fees/Other	9%
	100%



Source: American School & University May 2003

57. *What are some of the implications of limited funds on building programs?*

- Schools open near design capacity
- Late arrival of funding can lead to both design and construction shortcomings
- Requires on-going school design modifications
- Unmet community expectations

Source: CEFPI-Pacific Northwest Region

58. *What % of a school construction project is Heating, Ventilation and Air Conditioning (HVAC)?*

Upwards to 25-35% of the cost of the project

Maintenance

59. *What is the percent of net current expenditures that school districts have spent annually on maintenance and operations over the last decade?*

1994	9.21%	1999	9.09%
1995	9.05%	2000	9.03%
1996	9.55%	2001	8.50%
1997	9.59%	2002	7.78%
1998	9.40%	2003	7.43%

Source: American School & University April 2003

60. *What is the total median M&O budget per square foot?*

National Median	<1,000 students	1,000 - 3,499 students	>3,500 students
$3.30	$3.03	$3.15	$4.13

Source: American School & University April 2003

Bond Issues

61. *What are key strategies of success for Bond Issue passage?*
    - Focus on Kids (not dollars)
    - "Where voters see value"

    Source: Design School Facilities for Learning

62. *What are the favorable voter characteristics?*
    - New resident to the community
    - Parent of a school-age child
    - Eighteen-year old student
    - Employed in skilled, clerical, or sales work

63. *What are favorable facts affecting the success of bond packages?*
    - Current demographic and enrollment trends
    - Required renovations/additions/new facilities
    - Improvement plan alternatives
        - (educational effectiveness and cost-efficiency)
    - Community benefits

Site Issues

64. *What is a general rule of thumb for size of school sites?*

    Elementary: 10 acres + 1 acre per 100 students

    Middle school: 20 acres + 1 acre per 100 students

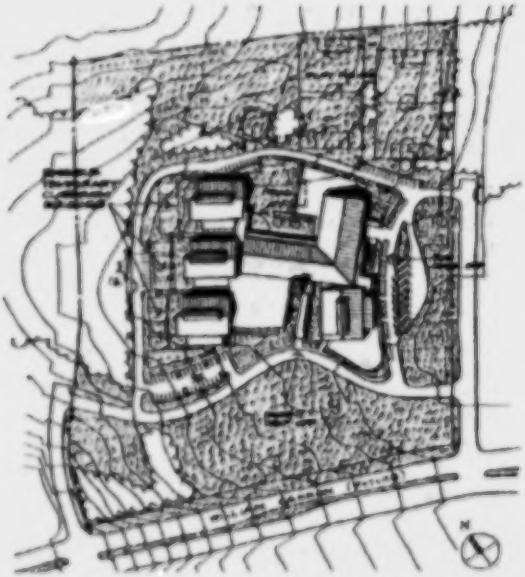
    High school: 30 acres + 1 acre per 100 students.

    Source: TEA, Council of Educational Facility Planners, International

65. *In a site selection process, what criteria should be included in the analysis and ranking of the proposed sites?*
    - Safety
    - Soil conditions
    - Topography

- Environment
- Location
- Accessibility
- Configuration
- Utilities
- Public services
- Cost
- Availability
- Political implications

Source: TEA-Division of State Funding and School Facilities



66. *What are some site safety issues?*
- Poorly-defined borders
- Poor building layouts with isolated areas
- No vehicular separation of buses, drop-off and parking areas
- Surrounding neighborhoods
- Inadequate signage
- Unsafe play equipment - ground surfacing

Accessibility

67. *Are there different height requirements for elementary, middle and high school accessibility?*

Yes, there is an extensive chart in Section 2.1.1 of the Texas Accessibility Standards (TAS), "Mounting Heights for Adults and Children," that dictates the minimum requirements for these age group divisions

68. *What are some examples of the differences in ADA requirements for students to adults?*

	Grades Pre-K - 5/6	Grades 6-8/9	Adult
Water Coolers	32"	34"	36"
Grab bars	28"-30'	30"-32"	33"-36"
Sink rim	30" max	32" max	34" max

69. *Are historic school buildings exempt from complying with the ADA standards?*
No, governmental programs located in historic properties are not excused from the requirement for program access

70. *What if it is not feasible to comply on existing structures or the site?*
Formal variances to areas that are technically and financially infeasible are options to explore.

71. *In addition to the building's primary function areas, what other facility requirements does ADA require?*
Alterations trigger "path of travel" from the entrance to the altered area and telephones, rest rooms and drinking fountains serving the altered area. A school district is required to spend up to 20% per year of the total cost of the original alteration in making the "path of travel" accessible.
Source: Compliance Guide for Public Schools Boards & Administrators, Disability Access Consultants, Inc.

Building Codes

72. *What building code does a district need to follow when the site or the district is **outside** of an area with a locally-adopted building code?*
A school district located in an area that has not adopted local building codes shall adopt and use the building code and related fire, plumbing, mechanical, fuel, gas and energy conservation codes from the latest edition of the family of International Codes published by the ICC, and the National Electric Code published by the NFPA. As an alternative, a school district may adopt the building code and related fire, plumbing, mechanical, fuel, gas and energy conservation codes as adopted by a nearby municipality or county.
Source: §61.1036(f)(2)(A) of the Texas Administrative Code (TAC)

Asbestos

73. *What buildings need to be inspected for asbestos prior to renovation?*
All buildings must be inspected prior to any renovation or demolition regardless of their completion date. Previously buildings completed after October 1988 did not have to be inspected for asbestos.
Source: TASB's Environmental Programs reference to the December 1998 revision of the Texas Asbestos Health Protection Rules.

Working with Architects

74. *What is meant by A/E?*

Architect / Engineer or Architectural / Engineering

Registered professionals with different educational and training backgrounds, and separate state licensing boards.

75. *When is the district required to hire an architect?*

For educational or assembly projects costing $100,000 or more (new) or $50,000 (if remodeling).

76. *Can A/E services be competitively bid for school projects?*

No. Selection shall be made on the basis of demonstrated competence and qualifications. This is the first of a two-step process. The second step is to negotiate an acceptable fee with the top-ranked firm.

Source: Section 2254.004 Government Code

77. *What is the range of basic architectural fees for new school construction?*

6-7.5% of construction cost

Source: CEFPI Southern Region Annual Conference, 1997

Construction Delivery Options

78. *What are the methods available to school districts to enter into contracts (except for the purchase of produce or vehicle fuel) valued at $25,000 or more in aggregate for each 12 month period?*

- competitive bidding
- competitive sealed proposals
- request for proposals
- catalogue purchase as provided by government code
- an inter-local contract
- design/build contract
- construction management contracts to construct, rehabilitate, alter or repair facilities
- job order contracts for minor repair, rehabilitation or alteration of a facility

Source: SB 1 and SB 583

79. *What is the determining factor as to which method of contracting the district should utilize?*

By the method which provides the best value to the district.
Source: SB 1 and SB 583

Examples of best value include:

- Cost
- Time
- District capability/staffing
- Type of project or program
- Accessibility, etc.

Source: CEFPI - Austin Chapter Meeting May '97

80. *What factors are considered in determining to whom to award a construction contract?*

- the purchase price
- the reputation of the vendor and of the vendor's goods or services
- the quality of the vendor's goods or services
- the extent to which the goods or services meet the district's needs
- the vendor's past relationship with the district
- the impact on the ability of the district to comply with laws and rules relating to historically underutilized business
- the total long-term cost to the district to acquire the vendor's goods or services
- any other relevant factor that a private business entity would consider.

Source: SB 1 and SB 583

Competitive Bidding

81. *What are some advantages of competitive bidding?*

- Familiar delivery method
- Defined scope
- Single point of accountability
- Easy process to understand and manage
- Open, aggressive bid competition

Source: Design School Facilities for Learning

82. What are some disadvantages of competitive bidding?

- Longer schedule duration
- Price not established until bidding complete
- If bid exceeds budget, more time required to re-design or rebid
- More adversarial relationship
- District or A/E receives no assistance from contractor during design phase on constructability, etc.

Source: *Design School Facilities for Learning*

Competitive Sealed Proposal

83. What are some advantages of competitive sealed proposals?

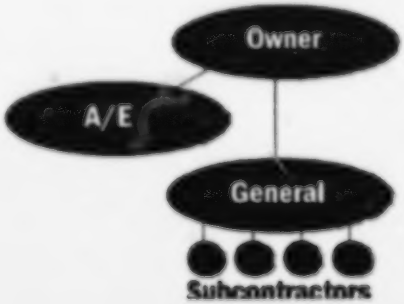
- Flexibility in contractor selection
- Single point of responsibility
- Visible method of changing scope to fit budget and not have to re-bid

Source: *Design School Facilities for Learning*

84. Where are some of the disadvantages of competitive sealed proposals?

- Longer schedule duration
- District or A/E receives no assistance from the contractor in the design phase
- More adversarial relationships

Source: *Design School Facilities for Learning*



85. What is CM agency?

CM agency is when the Construction Manager serves as an agent for the district and provides administration and management services during construction and consultation during the design phase.

Source: *Design School Facilities for Learning*

86. What are the advantages of Construction Management Agency?

- Design assistance in cost, schedule and quality
- Direct control of the trade contractors
- Non-adversarial relationship
- Flexibility in packaging and enhanced opportunities for local participation
- Schedule can be reduced

Source: *Design School Facilities for Learning*

87. *What are the disadvantages of Construction Management Agency?*

- No single point of responsibility for construction
- Price is not established until all packages are bid
- District must manage more contracts
- No guaranteed price

Source: Design School Facilities for Learning

Construction Manager @ Risk

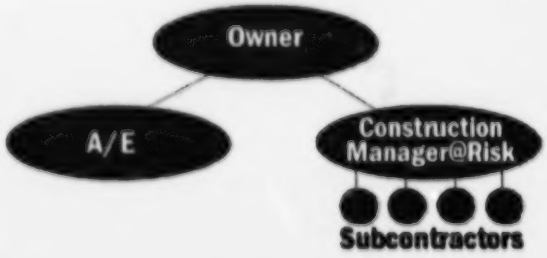
88. *What is Construction Management@Risk?*

CM@Risk is when the CM serves as the general contractor providing administration and management services.
Source: Design School Facilities for Learning

89. *What are the advantages of CM@Risk?*

- Flexibility in selection
- Single point of construction responsibility
- Design assistance in cost, schedule and quality
- Team concept
- Open book
- Potential for faster delivery

Source: Design School Facilities for Learning



90. *What are the disadvantages of Construction Management@Risk?*

- Potential adversarial relationship
- Assumes CM can buy project out as effectively as GC
- Difficult for owner to evaluate validity of a guaranteed maximum price (GMP)

Source: Design School Facilities for Learning

Design/Build

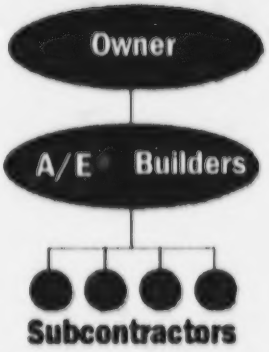
91. *What is Design/Build?*

Design/Build is a delivery method where a single entity is contracted to provide both design and construction.
Source: Design School Facilities for Learning

92. *What are the advantages of Design/Build?*

- Single point of responsibility and accountability for design and construction
- Team concept
- Potential for faster delivery
- Flexibility in selection

Source: Design School Facilities for Learning



93. *What are the disadvantages of Design/Build?*

- Potential adversarial relationship
- More difficult process to select and manage
- Quality and design not known before prices given
- Least amount of competitive bidding.

Source: Design School Facilities for Learning

94. *What is Bridging?*

Bridging is another form of Design/Build where the district hires an A/E to prepare a more comprehensive "design criteria package." This package represents 30%-50% complete design documents and fully delineates the design and details of the project requirements. The Design/Builder is selected on either competitive bid process or a combination of qualifications, experience and price. The Design/Builder completes the construction documents and performs the work.

Source: Design School Facilities for Learning

95. *What is a "design criteria package"?*

"Design criteria package" is a set of documents that provides sufficient information to permit a response to a school's requirements. It must specify criteria the district considers necessary to describe the project and may include: site survey, interior space requirements, special material requirements, material quality standards, conceptual criteria, special equipment, cost or budget estimates, time schedule, quality assurance, site development requirements, parking, etc.

Source: Design School Facilities for Learning

Sustainability Issues

96. *What is meant by "Green Design?"*

"Green Design" is characterized by design and construction practices which "significantly reduce or eliminate the negative impact of buildings on the environment and occupants."
Source: U.S. Green Building Council

97. *What are the benefits of designing a "green" school building?*

- Environmental: Reducing the impacts of natural resource consumption
- Economic: Improving the bottom line
- Health & Safety: Enhancing occupant comfort and health
- Community: Minimizing strain on local infrastructures and improving quality of life

Source: U.S. Green Building Council

98. *What is the LEED™ Rating System?*

The LEED Green Building Rating System™ is a priority program of the US Green Building Council. It is a voluntary, consensus-based, market-driven building rating system based on existing proven technology. It evaluates environmental performance from a collaborative, "whole building" perspective over a building's life cycle, providing a definitive standard for what constitutes a "green building." Please refer to www.usgbc.org.
Source: U.S. Green Building Council

99. *What components of a project are considered for a LEED rating?*

Virtually every aspect of a building project: Sustainable site; water efficiency; energy & atmosphere; materials & resources; and indoor environmental quality.
Source: U.S. Green Building Council

100. *Where can LEED-certified professionals be located?*

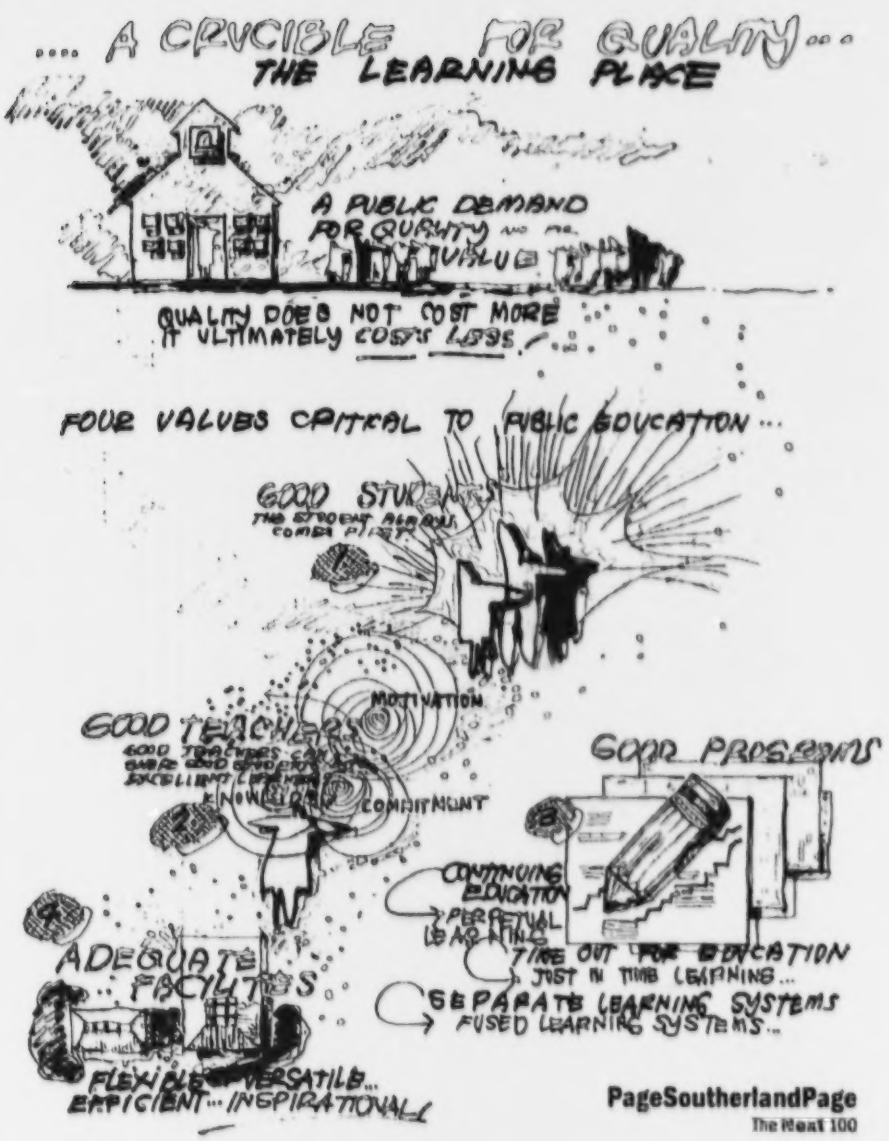
The U.S. Green Building Council maintains a membership list of architects, engineers, contractors, etc., by category, on their website: www.usgbc.org/aboutus/index.htm.
Source: U.S. Green Building Council

101. *What questions can we answer for you?*

Please contact Jim Brady at jbrady@psp.com, or 888.541.7119.

The most successful schools foster student achievement through safe, economical, flexible, engaging and nurturing environments.

PageSoutherlandPage understands that your building is an integral part of the learning world, and we have a rich history of helping schools like yours meet your facility challenges.



PageSoutherlandPage
The Next 100

BEST COPY AVAILABLE

Creating quality learning environments is more than just a responsibility.

It is an opportunity to work collaboratively together in designing the learning experience.

Today's schools require advanced planning, educational and technical expertise, creative flexible and economical solutions.

The goal is student success.

PageSoutherlandPage
Designing the Future since 1898

PageSoutherlandPage

The Next 100

606 West Avenue
Austin Texas 78701-2725
TEL 512 472 6721
FAX 512 477 3211

3500 Maple Avenue, Suite 600
Dallas Texas 75219-3931
TEL 214 522 3900
FAX 214 522 4380

Post Oak Tower at The Galleria
5051 Westheimer, Suite 600
Houston Texas 77056-5604
TEL 713 871 8484
FAX 713 871 8440

Colonial Place
2107 Wilson Blvd Suite 410
Arlington Virginia 22201-3008
TEL 703 527 4100
FAX 703 522 8043

www.psp.com

U.S. Department of Education
Office of Educational Research and Improvement (OERI)
National Library of Education (NLE)
Educational Resources Information Center (ERIC)

ERIC Educational Resources Information Center

REPRODUCTION RELEASE

(Specific Document)

I. DOCUMENT IDENTIFICATION:

Title: Keys to Success: School Facilities Primer Questions & Answers 101	
Author(s): Brady, Jim	
Corporate Source: PageSoutherlandPage	Publication Date: 2003

II. REPRODUCTION RELEASE:

In order to disseminate as widely as possible timely and significant materials of interest to the educational community, documents announced in the monthly abstract journal of the ERIC system, *Resources in Education* (RIE), are usually made available to users in microfiche, reproduced paper copy, and electronic media, and sold through the ERIC Document Reproduction Service (EDRS). Credit is given to the source of each document, and, if reproduction release is granted, one of the following notices is affixed to the document.

If permission is granted to reproduce and disseminate the identified document, please CHECK ONE of the following three options and sign at the bottom of the page.

The sample sticker shown below will be affixed to all Level 1 documents

PERMISSION TO REPRODUCE AND DISSEMINATE THIS MATERIAL HAS BEEN GRANTED BY

Sample

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

1

Level 1 ☑

Check here for Level 1 release, permitting reproduction and dissemination in microfiche or other ERIC archival media (e.g., electronic) and paper copy

The sample sticker shown below will be affixed to all Level 2A documents

PERMISSION TO REPRODUCE AND DISSEMINATE THIS MATERIAL IN MICROFICHE, AND IN ELECTRONIC MEDIA FOR ERIC COLLECTION SUBSCRIBERS ONLY, HAS BEEN GRANTED BY

Sample

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

2A

Level 2A ☐

Check here for Level 2A release, permitting reproduction and dissemination in microfiche and in electronic media for ERIC archival collection subscribers only

The sample sticker shown below will be affixed to all Level 2B documents

PERMISSION TO REPRODUCE AND DISSEMINATE THIS MATERIAL IN MICROFICHE ONLY HAS BEEN GRANTED BY

Sample

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

2B

Level 2B ☐

Check here for Level 2B release, permitting reproduction and dissemination in microfiche only

Documents will be processed as indicated provided reproduction quality permits.
If permission to reproduce is granted, but no box is checked, documents will be processed at Level 1.

I hereby grant to the Educational Resources Information Center (ERIC) nonexclusive permission to reproduce and disseminate this document as indicated above. Reproduction from the ERIC microfiche or electronic media by persons other than ERIC employees and its system contractors requires permission from the copyright holder. Exception is made for non-profit reproduction by libraries and other service agencies to satisfy information needs of educators in response to discrete inquiries.

Sign here, please

Signature: NC A Fleshman	Printed Name/Position/Title: Nancy A. Fleshman, Director of Research
Organization/Address: PageSoutherlandPage 5051 Westheimer, Suite 600 Houston, TX 77056	Telephone: 713.871.8484 FAX: 713.871.8440
	E-Mail Address: nfleshman@psp.com Date: 8.18.03

(Over)

III. DOCUMENT AVAILABILITY INFORMATION (FROM NON-ERIC SOURCE):

If permission to reproduce is not granted to ERIC, *or*, if you wish ERIC to cite the availability of the document from another source, please provide the following information regarding the availability of the document. (ERIC will not announce a document unless it is publicly available, and a dependable source can be specified. Contributors should also be aware that ERIC selection criteria are significantly more stringent for documents that cannot be made available through EDRS.)

Publisher/Distributor:
Address:
Price:

IV. REFERRAL OF ERIC TO COPYRIGHT/REPRODUCTION RIGHTS HOLDER:

If the right to grant this reproduction release is held by someone other than the addressee, please provide the appropriate name and address:

Name:
Address:

V. WHERE TO SEND THIS FORM:

Send this form to the following ERIC Clearinghouse:	**National Clearinghouse for Educational Facilities** **National Institute of Building Sciences** **1090 Vermont Ave., NW #700** **Washington, DC 20005-4905** or fax to 202-289-1092

However, if solicited by the ERIC Facility, or if making an unsolicited contribution to ERIC, return this form (and the document being contributed) to:

ERIC Processing and Reference Facility
4483-A Forbes Boulevard
Lanham, Maryland 20706

Telephone: 301-552-4200
Toll Free: 800-799-3742
FAX: 301-552-4700
e-mail: ericfac@inet.ed.gov
WWW: http://ericfacility.org

EFF-088 (Rev. 2/2001)